

IN THE U.S. PATENT AND TRADEMARK OFFICE

March 30, 1995

#5/E
MC/LL

3/31/95

Applicants: Iver E. Anderson, et al.

For : Pb-FREE Sn-Ag-Cu TERNARY EUTECTIC SOLDER

Serial No.: 08/394 228

Group: 3205

Filed : Feb. 24, 1995

Examiner: Knapp

Atty. Docket
No. ISU Case 340AThe Commissioner of Patents and Trademarks
Washington, D.C. 20231

FAX BODY REQUESTED

MAR 5 1 1995

GROUP 3200

PRELIMINARY RESPONSE

Dear Sir:

Please amend the above-identified application as follows:

In the Claims

Please amend the following claims:

1. (Thrice Amended) A Pb-free electrical conductor solder consisting essentially of about 3.5 to about 7.7 weight % Ag, about 1.0 to about 4.0 weight % Cu and the balance essentially Sn wherein Sn is present in an amount of at least about 89 weight % Sn to promote formation of intermetallic compounds that improve solder [wettability on the electrical conductor, said solder being free of Ti, V, and Zr] strength and fatigue resistance.

5. (Thrice Amended) A Pb-free electrical conductor solder including a ternary eutectic composition consisting essentially of about 93.6 weight % Sn-about 4.7 weight % Ag-1.7 weight % Cu having a eutectic melting temperature of about 217°C and variants of said ternary eutectic composition wherein the relative concentrations of Sn, Ag, and Cu deviate from said ternary eutectic composition to provide a controlled liquid plus solid [mushy] temperature range with a liquidus temperature not exceeding 15°C above said eutectic melting temperature and at least two intermetallic compounds dispersed in a beta Sn matrix wherein one intermetallic compound includes Cu and Sn and another intermetallic compound includes Ag and Sn[, said ternary composition and variants thereof being free of Ti, V, and Zr].

21